

# SECTION 3

## Species of Conservation Priority

This section includes information on the following required element:

**Element 1:** A primary requirement of the CWCS was to provide information on the distribution and abundance of wildlife species, including low and declining populations as the North Dakota Game and Fish Department deems appropriate, that are indicative of the diversity and health of the state's wildlife.

### 3.1 Interpretation of Species in Greatest Need of Conservation

Additional guidance for interpreting Element 1 and the species of conservation priority list was provided in part by the State Wildlife Grants FY 2002 program implementation guidance:

- The term wildlife means “any species of wild, free-ranging fauna including fish, and also fauna in captive breeding programs, the object of which is to reintroduce individuals of a depleted indigenous species in a previously occupied range.”
- Species must be fauna, not flora, and *may* include aquatic species and invertebrates. States have the option of choosing which taxonomic units to include.
- The list may include both hunted and non-hunted species. States have the option of whether or not to include game species on the list.
- The list may include current federally threatened or endangered species, state listed, or species of concern.
- The list is subject to change and reorganization as new information becomes available and as the status and conservation need of species changes.
- Species on the list may be prioritized for directing conservation efforts, monitoring, or research.
- The state is not obligated to implement conservation actions for all species immediately. Species needs vary and many may not be addressed for several years.

### 3.2 The Overall Process

North Dakota did not have an up-to-date state list of species of conservation priority (SoCP). In May 2002, NDGFD staff began compiling information on birds, mammals, reptiles, amphibians, fish, and freshwater mussels. A preliminary draft of species of conservation priority was reviewed by select Department staff in January 2004. Comments from staff were used to create a second draft in early February. On February 25, 2004 the second version of the list was sent for comment and review to 8 federal agencies, 8 state agencies, 7 non-governmental organizations, 14 university academics, 5 Native American tribes, and several private citizens. Roughly 1/3 of the recipients provided comments, which were used to formulate a final species of conservation priority list published in the July 2004 issue of North Dakota Outdoors magazine, the official publication of the NDGFD (see Table 1). One-hundred SoCP were identified.

#### 3.2.a Species Considered

All members of the following taxonomic groups that inhabit North Dakota were considered in the CWCS: birds, mammals, reptiles, amphibians, fish, and freshwater mussels. Game species, extirpated, federal threatened or endangered and migratory species were considered as well. Non-native species were not considered unless presently designated as naturalized.

Other than freshwater mussels, the Department chose not to include any invertebrates, including aquatic invertebrates, which were optional for integration in the CWCS. Freshwater mussels were included due to a fair amount of recent information to assess which of those species should be considered for conservation priority. Invertebrates were excluded due to an extreme lack of information or status and distribution on invertebrate species inhabiting the state. Due to the relatively short deadline for completing

the CWCS, the task of attempting to identify invertebrate species of conservation priority, threats, conservation actions, and priority research or survey needs for them was thought to be too great at this point.

### 3.2.a.i Addressing Invertebrates in the Future

The conservation actions identified in the CWCS will undoubtedly benefit invertebrates in addition to the 100 SoCP. For example, protecting native prairie for Baird's sparrows will also protect the Dakota skipper. Multiple species are likely to benefit from conservation actions applied. Although invertebrates are not specifically named in this document they are important parts of the key habitats and community types identified in Section 5.

Section 7 explains the process and timeline for reviewing and updating the CWCS. The NDGFD anticipates compiling a checklist of invertebrates gradually over the next 5-10 years. Whether there will be enough information to properly assess and identify SoCP is unknown at this time. If sufficient information is obtained, an attempt will be made to develop a SoCP list for those orders of invertebrates by 2015. The extent of survey and research efforts for invertebrates in the state is unidentified at this time. Therefore, no research or survey efforts for invertebrates will be identified in this or future versions of the CWCS until previous efforts are known.

### 3.2.b Rationale

Initial attempts to develop a species of conservation priority list were based on varying degrees of rarity, geographic range, breeding status, (e.g., watch, candidate, peripheral, extirpated, etc.), and others. However, having fewer categories became less confusing and probably more accurately represented the level of knowledge of a broad range of species. In addition, placing species into levels of conservation priority would allow us to focus on those species in the greatest need of conservation.

Several species included on the list are considered common in North Dakota, or at least, not declining. These species were included because of the state's importance as a last stronghold for that particular population, or because of their contribution to species diversity in North Dakota. These are "responsibility" species for which North Dakota has a long-term stewardship role, even if there is no immediate need for conservation here. For example, the American white pelican is found in great numbers in North Dakota, but is designated as vulnerable, imperiled, or critically imperiled in 27 states and provinces.

## 3.3 Process Used for Identifying Species of Conservation Priority

The methods for identifying avian SoCP differed greatly from those used to identify mammals, reptiles, amphibians, fish and freshwater mussels. This is in part due to a much greater amount of information available on birds and more intense, longer, and nationwide survey of bird status in North Dakota and North America.

### 3.3.a Birds

There are numerous regional, national, and international planning efforts in place for conservation of birds. Perhaps the best recognized is the North American Waterfowl Management Plan and subsequent joint venture plans. Recently, additional efforts have focused on waterbirds, shorebirds, and landbirds. These initiatives include Waterbird Conservation for the Americas, US Shorebird Conservation Plan, and Partners in Flight North American Land Bird Conservation Plan. These plans provide a national or even international, very broad synopsis of topics such as populations, conservation goals and strategies, scientific and communication needs. Regional efforts such as the Northern Prairie and Parkland Waterbird Conservation Plan and the Northern Plains/Prairie Potholes Regional Shorebird Conservation Plan have provided further detailed and researched topics.

These bird planning efforts have also identified species of conservation concern or prioritized species in need of conservation. The designations from these efforts were of value in identifying species of conservation priority for North Dakota. However, it was felt there was also a need to utilize a more encompassing tool for identifying and prioritizing SoCP. The PIF species assessment and prioritization scheme was this tool.

### 3.3.a.i. Partners in Flight Species Assessment and Prioritization

Partners In Flight (PIF) is a cooperative effort involving federal, state and local government agencies, philanthropic foundations, professional organizations, conservation groups, industry, the academic community, and private individuals. PIF was formed in 1990 to address the declines in many populations of land bird species. Initial focus was on neotropical migrants, but has since spread to include many other land birds requiring terrestrial habitats.

Of all the initiatives undertaken by PIF, identification of priority species may have been the most valuable to the CWCS. Beginning in 1991, PIF began developing a process to assess the status of each bird species in North America. As stated in the 2001 Partners In Flight Handbook on Species Assessment and Prioritization: "The principal objectives of this effort were to establish an unbiased means of identifying bird species that are in most need of conservation attention, and to identify areas where conservation efforts for those species are likely to be most effective." This system, which assigns scores to species in categories pertaining to their biology and conservation, was originally intended to assist in regional conservation priority-setting among breeding birds, specifically in the U.S. and PIF physiographic areas. More recently, the approach was applied at the continental scale to address species in Bird Conservation Regions (BCR), the planning units under the North American Bird Conservation Initiative (NABCI). (See figure 2 for a map of the BCR's in North Dakota).

Under the PIF Assessment process, scores are assigned to species in six biologically based categories, sometimes called vulnerability factors, and a seventh factor to reflect local stewardship responsibility. For a species, a score is assigned in each category. Scores for each factor range from 1 (lowest vulnerability) to 5 (highest vulnerability). The assessment factors are as follows:

- Relative Abundance (RA): A measure of the component of vulnerability that reflects the abundance of breeding individuals of a species, within its range, relative to other species.
- Breeding Distribution (BD): A measure of the component of vulnerability that reflects the global distribution of breeding individuals of a species during the breeding season.
- Non-breeding Distribution (ND): A measure of the component of vulnerability that reflects the global distribution of a species during the non-breeding season.
- Threats to Breeding (TB): An evaluation of the component of vulnerability that reflects the effects of current and future extrinsic conditions on the ability of a species to maintain healthy populations through successful reproduction.
- Threats to Non-breeding (TN): An evaluation of the component of vulnerability that reflects the effects of current and future extrinsic conditions on the ability of a species to maintain healthy populations through successful survival over the non-breeding season.
- Population Trend (PT): A measure of the component of vulnerability reflected by the direction and magnitude of changes in population size over the past 30 years.
- Area Importance (AI): Reflects the relative importance of an area to a species and its conservation, based on the abundance of the species in that area relative to other areas.

The seven factors listed above are used to complete a conservation assessment and prioritization scheme for each species in a planning region. The Total Assessment Score is derived by simply adding the scores from each of the seven categories for a particular species. Total scores may then range from 5 (being the lowest vulnerability) to 35 (being the highest vulnerability).

### 3.3.a.ii. Using Species Assessment and Prioritization and other Sources to Determine Birds of Conservation Priority

All landbirds, shorebirds, and waterbirds were evaluated if they met at least one of the following criteria:

- (1) a PIF total assessment score of 20 or greater in either BCR\* 11 or 17, with an AI score of 2 or greater
- (2) a U.S. Shorebird Conservation Plan category of 4 (High Concern) or 5 (Highly Imperiled) on either the national or regional level

(3) a North American Waterbird Conservation Plan category of High Concern or Moderate Concern at the regional level

(4) current federal endangered, threatened, or candidate species

(5) proposed or recent delisting from the Endangered Species Act

(6) additional species of local management interest (i.e. waterfowl designations from the NAWMP and Birds of Conservation Concern as identified by the USFWS)

\*BCR scores were used because North Dakota scores had not been completed at the time.

All bird species identified in at least one of these categories and in North Dakota during breeding season were considered. An internal review team then identified the species that warranted placement on the list and a corresponding level of conservation priority (see Table 2 for the matrix of avian SoCP and corresponding sources).

### **3.3.b Amphibians, Reptiles, Mammals, Fish and Freshwater Mussels**

A species automatically made the list if it was designated as federally threatened or endangered. The process used to place other species on the list was more extensive. Little site-specific information is currently available on the majority of non-hunted species in North Dakota. There has been little research directed at, for example, identifying the population status of the plains spadefoot toad or the pygmy shrew, or even distribution and abundance of many other species. For avian species, several task forces and groups of bird experts are attempting to identify species of concern at regional or national levels. Surveys and monitoring efforts such as the North American Breeding Bird Survey also attempt to identify trends in bird populations. For other groups such as mammals, reptiles, amphibians, fish, and freshwater mussels, there is considerably less information available and much of it is dated.

From available sources, the NDGFD generated a working draft of species of conservation priority. Sources for most taxonomic groups included but were not limited to the Nongame Management Plan for North Dakota (1988), Endangered, Threatened, and Peripheral Wildlife of North Dakota (1979), and the North Dakota Natural Heritage Inventory (2002). After compiling all information, species that were indicated on several lists were more likely to be included in the draft list. The decision to include other species on the list was more subjective. In those instances, we relied on anecdotal evidence, correspondence with academia, input from professionals in the field, information from surrounding states, and professional judgment. More weight was given to recent compilations when evidence was conflicting (see Tables 3 and 4 for the matrix of amphibian, reptile, mammals, fish, and freshwater mussel SoCP and corresponding sources).

### 3.4 Species of Conservation Priority Level Definitions

With limited funds and 100 SoCP, there was a need to prioritize species according to conservation need. The following categories were developed to describe the conservation needs for North Dakota's SoCP. These definitions apply only for the purposes of SWG planning.

**Level I:** These are species that are in decline and presently receive little or no monetary support or conservation efforts. North Dakota Game and Fish Department has a clear obligation to use SWG funding to implement conservation actions that directly benefit these species. Level I species are those having a:

- high level of conservation priority because of declining status either here or across their range
- or -
- high rate of occurrence in North Dakota, constituting the core of the species breeding range (i.e. "responsibility" species) but are at-risk range wide

**Level II:** North Dakota Game and Fish Department will use SWG funding to implement conservation actions to benefit these species if SWG funding for Level I species is sufficient or conservation needs have been met. Level II species are those having a:

- moderate level of conservation priority
- or -
- high level of conservation priority but a substantial level of non-SWG funding is available to them

**Level III:** These are North Dakota's species having a moderate level of conservation priority but are believed to be peripheral or non-breeding in North Dakota.

**Table 1. North Dakota's 100 Species of Conservation Priority.**

Level I	
Horned Grebe	<i>Podiceps auritus</i>
American White Pelican	<i>Pelecanus erythrorhynchos</i>
American Bittern	<i>Botaurus lentiginosus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Ferruginous Hawk	<i>Buteo regalis</i>
Yellow Rail	<i>Coturnicops noveboracensis</i>
Willet	<i>Catoptrophorus semipalmatus</i>
Upland Sandpiper	<i>Bartramia longicauda</i>
Long-billed Curlew	<i>Numenius americanus</i>
Marbled Godwit	<i>Limosa fedoa</i>
Wilson's Phalarope	<i>Phalaropus tricolor</i>
Franklin's Gull	<i>Larus pipixcan</i>
Black Tern	<i>Chlidonias niger</i>
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
Sprague's Pipit	<i>Anthus spragueii</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Baird's Sparrow	<i>Ammodramus bairdii</i>
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsonii</i>
Lark Bunting	<i>Calamospiza melanocorys</i>
Chestnut-collared Longspur	<i>Calcarius ornatus</i>
Canadian Toad	<i>Bufo hemiophrys</i>
Plains Spadefoot	<i>Spea bombifrons</i>
Smooth Green Snake	<i>Liochlorophis vernalis</i>
Western Hognose Snake	<i>Heterodon nasicus</i>
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>
Sturgeon Chub	<i>Macrhybopsis gelida</i>
Sicklefin Chub	<i>Macrhybopsis meeki</i>
Pearl Dace	<i>Margariscus margarita</i>
Blue Sucker	<i>Cycleptus elongatus</i>

Level II	
Northern Pintail	<i>Anas acuta</i>
Canvasback	<i>Aythya valisineria</i>
Redhead	<i>Aythya americana</i>
Northern Harrier	<i>Circus cyaneus</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Bald Eagle	<i>Haliaeetus leucocephalus</i>
Prairie Falcon	<i>Falco mexicanus</i>
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>
Greater Sage-Grouse	<i>Centrocercus urophasianus</i>
Piping Plover	<i>Charadrius melodus</i>
American Avocet	<i>Recurvirostra americana</i>
Least Tern	<i>Sterna antillarum</i>
Short-eared Owl	<i>Asio flammeus</i>
Burrowing Owl	<i>Athene cunicularia</i>
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>
Loggerhead Shrike	<i>Lanius ludovicianus</i>
Sedge Wren	<i>Cistothorus platensis</i>
Dickcissel	<i>Spiza americana</i>
Le Conte's Sparrow	<i>Ammodramus leconteii</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Common Snapping Turtle	<i>Chelydra serpentina</i>
Short-horned Lizard	<i>Phrynosoma douglassi</i>
Northern Redbelly Snake	<i>Storeria occipitomaculata</i>
Pygmy Shrew	<i>Sorex hoyi</i>
Richardson's Ground Squirrel	<i>Spermophilus richardsonii</i>
Swift Fox	<i>Vulpes velox</i>
River Otter	<i>Lutra canadensis</i>
Black-footed Ferret	<i>Mustela nigripes</i>
Paddlefish	<i>Polyodon spathula</i>
Pallid Sturgeon	<i>Scaphirhynchus albus</i>
Silver Chub	<i>Macrhybopsis storeriana</i>
Northern Redbelly Dace	<i>Phoxinus eos</i>
Flathead Chub	<i>Platygobio gracilis</i>
Trout-perch	<i>Percopsis omiscomaycus</i>
Threeridge	<i>Amblema plicata</i>
Wabash Pigtoe	<i>Fusconaia flava</i>
Mapleleaf	<i>Quadrula quadrula</i>
Black Sandshell	<i>Ligumia recta</i>
Creek Heelsplitter	<i>Lasmigona compressa</i>
Pink Heelsplitter	<i>Potamilus alatus</i>

Level III	
Whooping Crane	<i>Grus americana</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Brewer's Sparrow	<i>Spizella breweri</i>
McCown's Longspur	<i>Calcarius mccownii</i>
Smooth Softshell Turtle	<i>Apalone mutica</i>
False Map Turtle	<i>Graptemys pseudogeographica</i>
Northern Prairie Skink	<i>Eumeces septentrionalis</i>
Northern Sagebrush Lizard	<i>Sceloporus graciosus</i>
Arctic Shrew	<i>Sorex arcticus</i>
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>
Long-eared Myotis	<i>Myotis evotis</i>
Long-legged Myotis	<i>Myotis volans</i>
Plains Pocket Mouse	<i>Perognathus flavescens</i>
Hispid Pocket Mouse	<i>Chaetodipus hispidus</i>
Sagebrush Vole	<i>Lemmiscus curtatus</i>
Eastern Spotted Skunk	<i>Spilogale putoris</i>
Gray Wolf	<i>Canis lupis</i>
Chestnut Lamprey	<i>Ichthyomyzon castaneus</i>
Silver Lamprey	<i>Ichthyomyzon unicuspis</i>
Central Stoneroller	<i>Campostoma anomalum</i>
Hornyhead Chub	<i>Nocomis biguttatus</i>
Pugnose Shiner	<i>Notropis anogenus</i>
Blacknose Shiner	<i>Notropis heterolepis</i>
Rosyface Shiner	<i>Notropis rubellus</i>
Finescale Dace	<i>Phoxinus neogaeus</i>
Yellow Bullhead	<i>Ameiurus natalis</i>
Flathead Catfish	<i>Pylodictis olivaris</i>
Logperch	<i>Percina caprodes</i>
River Darter	<i>Percina shumardi</i>
Pink Papershell	<i>Potamilus ohioensis</i>

**Table 2.** Matrix of avian SoCP and corresponding source score/listing.

Species of Conservation Priority Level	Corresponding Source Number	18		18		19		20	6	21			22	
	Birds	PIF Area Importance for BCR11	PIF Total Assessment Score for BCR11	PIF Area Importance for BCR17	PIF Total Assessment Score for BCR17	USSCP National	USSCP Regional	NPPWCP	Current Federal Status	USFWS BCC BCR11 (Fig. 2)	USFWS BCC BCR17 (Fig. 2)	USFWS BCC Region 6 (Fig. 3)	NAWMP Breeding Importance/Habitat Conservation Need for BCR11	NAWMP Breeding Importance/Habitat Conservation Need for BCR17
1	Horned Grebe	3	19					High						
1	American White Pelican	4	21	4	21			Moderate						
1	American Bittern	5	22	2	18			High		X				
2	Northern Pintail	5	20	3	15								High/Highest	Mod. High/High
2	Canvasback	5	20	2	17								High/High	Mod. Low/Mod. Low
2	Redhead	5	19	2	18								High/High	Mod. Low/Mod. Low
2	Northern Harrier	5	22	5	21					X		X		
1	Swainson's Hawk	5	25	4	21					X		X		
1	Ferruginous Hawk	5	22	5	23					X	X	X		
2	Golden Eagle			5	19						X	X		
2	Bald Eagle	1	16	1	16				T					
3	Peregrine Falcon	2	19	3	19				Delisted	X	X	X		
2	Prairie Falcon			4	23						X	X		
2	Sharp-tailed Grouse	5	22	5	20									
2	Greater Prairie-Chicken	2	26	2	26									
2	Greater Sage-Grouse			5	25									
1	Yellow Rail	3	26					High Listed		X		X		
3	Whooping Crane								E					
2	Piping Plover	2	26	3	27	5	5		T					
2	American Avocet	3	20	2	18	3	4							
1	Willet	5	24	2	20	3	3			X				
1	Upland Sandpiper	5	23	5	22	2	4			X	X	X		
1	Long-billed Curlew	5	24	4	24	5	2			X	X	X		
1	Marbled Godwit	5	26	2	21	4	4			X	X	X		
1	Wilson's Phalarope	5	25	5	27	4	4			X	X	X		
1	Franklin's Gull	5	21	1	18			High Listed						
2	Least Tern	3	17	2	16			High	E					
1	Black Tern	5	20	1	17									
1	Black-billed Cuckoo	5	24	3	22					X	X	X		
2	Burrowing Owl	2	21	3	20					X	X	X		
2	Short-eared Owl	3	22	4	21					X	X	X		
2	Red-headed Woodpecker	4	22	2	21					X		X		
2	Loggerhead Shrike	2	19	3	17					X		X		
2	Sedge Wren	5	21	1	18									
1	Sprague's Pipit	5	27	3	21					X	X	X		
3	Brewer's Sparrow			3	21						X	X		
1	Lark Bunting	2	21	5	21									
1	Grasshopper Sparrow	4	22	5	22					X	X	X		
1	Baird's Sparrow	5	29	4	27					X	X	X		
2	Le Conte's Sparrow	4	24	2	22					X	X	X		
1	Nelson's Sharp-tailed Sparrow	5	28							X		X		
3	McCown's Longspur	5	29	5	28					X	X	X		
1	Chestnut-collared Longspur	5	24	5	27					X	X	X		
2	Dickcissel	2	20	2	23						X	X		
2	Bobolink	4	20	2	18							X		

**Table 3.** Matrix of amphibian, reptile, and mammal SoCP and corresponding source score/listing.

Species of Conservation Priority Level	Corresponding Source Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	23	Comments
		E, T & P Wildlife	NDCTWS	The Rare Ones	NDGFD Nongame Management Plan	ND Federal T,E & Candidate 1995	Current Federal Status	North Dakota Natural Heritage Rare Animals	North Dakota Natural Heritage State Ranks	South Dakota Natural Heritage State Ranks	Montana Natural Heritage State Ranks	Minnesota DNR: E, T, and Special Concern	TNC Northern Tallgrass Prairie Plan (Fig. 4)	TNC Northern Great Plains Steppe Plan (Fig. 4)	IUCN Red List 2003	National Forest Service Northern Region	BLM Montana/Dakotas	COSEWIC	American Society of Mammalogists	
	<b>Amphibians and Reptiles</b>																			
1	Plains Spadefoot										S3									"Most warranted"
1	Canadian Toad										S1		2							Limited range
2	Common Snapping Turtle										S3	SC								
3	False Map Turtle	P	P	P	X	C		X	SU	S3										
3	Smooth Softshell Turtle	P	P	P	X			X	SU	S2		SC								
3	Northern Sagebrush Lizard	P	P	P	X	C		X	S4	S2	S3									
2	Short-horned Lizard		P	P		C		X	S?	S2	S3									
3	Northern Prairie Skink	P	P	P	X			X	S2S3				2					SC		
2	Northern Redbelly Snake									S3										
1	Western Hognose Snake										S3	SC								
1	Smooth Green Snake									S4	S2S3									
	<b>Mammals</b>																			
3	Arctic Shrew									S1										Limited range
2	Pygmy Shrew		W	W	X			X	SU	S2	S3									
3	Western Small-footed Myotis			W	X	C		X	SU											
3	Long-eared Myotis		W	W	X	C		X	SU	S1										
3	Long-legged Myotis		W	W	X	C		X	SU											
3	Hispid Pocket Mouse	P	P	P	X			X	S4		S1									
3	Plains Pocket Mouse	P	W	W	X			X	SU	S5	S3	SC	2							
3	Sagebrush Vole							X	S4	S1								D	X	
1	Black-tailed Prairie Dog		W	W	X	C		X	SU		S3/S4			1	X	X	X	SC		Recently delisted from candidate list
2	Richardson's Ground Squirrel																			Anecdotal observations of loss
3	Gray Wolf	E	W		X	E	T	X	SX	SA	S3	SC	2	1						Recently down listed
2	Swift Fox	E	E	E	X	C		X	S1	S1	S1			1	X					
2	River Otter		E	E	X			X	S1	S2										
2	Black-footed Ferret	E	E	E	X	E	E	X	S1	S1	S1			1	X	X	X	T	X	
3	Eastern Spotted Skunk			W	X			X	S1	S3	S1	T	2				X			

**1, 2, 3, 11, and 17:** E = Endangered, T = Threatened, P = Peripheral, Ext. = Extirpated, SC = Special Concern, W = Watch, NAR = Not At Risk, D = Data deficient

**4, 7, 14, 15, 16, and 23:** X = the species was designated on this list

**5:** C = once listed as a federal Candidate species

**6:** E = federal Endangered species, T = federal Threatened species, C = federal Candidate species

**8, 9, and 10:** S1 = Critically Imperiled, S2 = Imperiled, S3 = Vulnerable, S4 = Apparently Secure, S5 = Secure, SU = Unrankable, SX = Presumed Extirpated, SR = Reported

**12 and 13:** 1 = Primary and 2 = Secondary target species



**Table 4.** Matrix of fish and freshwater mussel SoCP and corresponding source score/listing.

Species of Conservation Priority Level	Corresponding Source Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	24	Comments
	Fish	E, T & P Wildlife	NDCTWS	The Rare Ones	NDGFD Nongame Management Plan	ND Federal T,E & Candidate 1995	Current Federal Status	North Dakota Natural Heritage Rare Animals	North Dakota Natural Heritage State Ranks	South Dakota Natural Heritage State Ranks	Montana Natural Heritage State Ranks	Minnesota DNR: E, T, and Special Concern	TNC Northern Tallgrass Prairie Plan (Fig. 4)	TNC Northern Great Plains Steppe Plan (Fig. 4)	IUCN Red List 2003	National Forest Service Northern Region	BLM Montana/Dakotas	COSEWIC	American Fisheries Society	
3	Chestnut Lamprey							X										SC	P/SC1	
3	Silver Lamprey							X		SA									P/SC2	
2	Pallid Sturgeon	T	T	T	X	E	E	X	S1	S1	S1		1	1	X				E	
2	Paddlefish		W	W	X	C		X	S?		S1S2	T			X		X		SC1	
3	Central Stoneroller	T	W	W	X			X	S3										P/SC1	
1	Sturgeon Chub	T	W	W	X	C		X	S2	S2	S2			1	X				T	
1	Sicklefin Chub	E	W	W	X	C		X	S2	S1	S1			1	X				E	
2	Silver Chub							X										SC	SC2	
1	Pearl Dace	T	W	W	X			X	S3	S2	S2								SC1	
3	Hornyhead Chub	T	W	W	X			X	S3	S3								NAR	P/SC1	
3	Pugnose Shiner	T	W	W	X			X	S1			S3	1						T	
3	Blacknose Shiner	T	P	P	X			X	S3	S1									P/SC1	
3	Rosyface Shiner	T	P	P	X			X	S3	S2									P/SC1	
2	Northern Redbelly Dace	T	W	W	X			X	S4	S2									SC1	
3	Finescale Dace	P	W	P	X			X		S1									P/SC1	
2	Flathead Chub					C		X											SC1	
1	Blue Sucker	T	W	W	X	C		X	S3	S3	S2S3	SC	1	1	X				SC1	
3	Yellow Bullhead	P	P	P	X			X											P/SC2	
3	Flathead Catfish	P	P	P	X			X	S4										P/SC1	
2	Trout-perch							X		S2	S2								SC2	
3	Logperch	P	P	P	X			X	S3	S3									P/SC2	
3	River Darter	P	P	P				X											P/SC1	
	<b>Mussels</b>																			
2	Threeridge									S2										
2	Wabash Pigtoe				X			X	S4	S1										
2	Mapleleaf				X			X	S3	S2										
2	Black Sandshell				X			X	S4	S1	SC									
2	Creek Heelsplitter									S1	SC									
2	Pink Heelsplitter				X			X	S4	S3										
3	Pink Papershell							X	SU	S5										

**1, 2, 3, 11, and 17:** E = Endangered, T = Threatened, P = Peripheral, Ext. = Extirpated, SC = Special Concern, W = Watch, NAR = Not At Risk, D = Data deficient

**4, 7, 14, 15, and 16:** X = the species was designated on this list

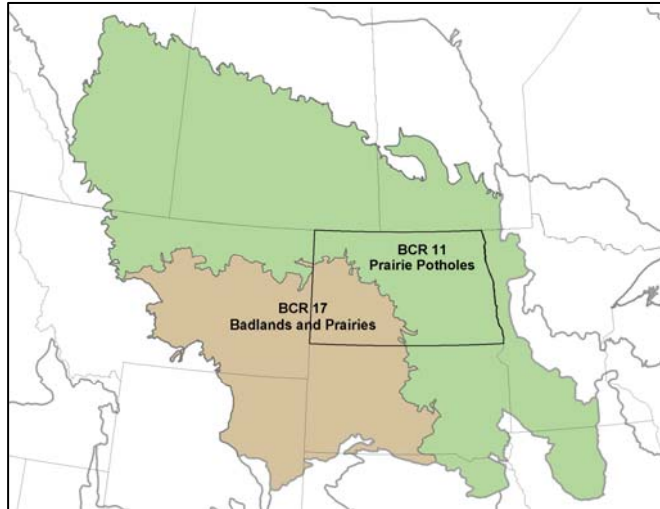
**5:** C = once listed as a federal Candidate species

**6:** E = federal Endangered species, T = federal Threatened species, C = federal Candidate species

**8, 9, and 10:** S1 = Critically Imperiled, S2 = Imperiled, S3 = Vulnerable, S4 = Apparently Secure, S5 = Secure, SU = Unrankable, SX = Presumed Extirpated, SR = Reported

**12 and 13:** 1 = Primary and 2 = Secondary target species

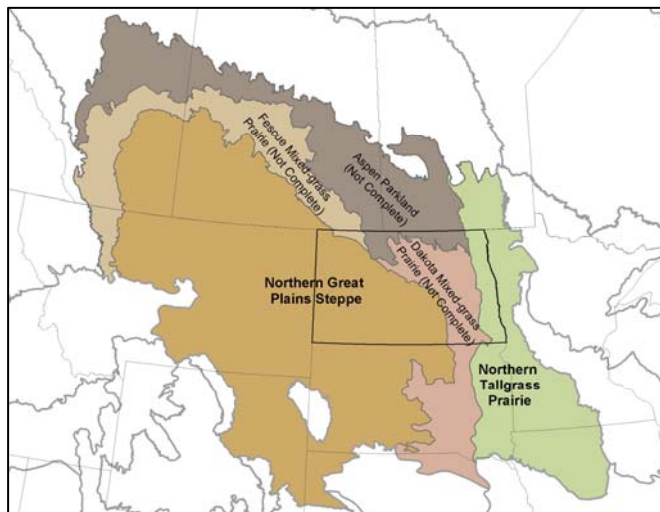
**24:** SC1 = Special Concern 1, SC2 = Special Concern 2, P/SC1 = Peripheral/Special Concern 1, P/SC2 = Peripheral/Special Concern



**Figure 2.** Bird Conservation Regions (BCR) encompassing North Dakota.



**Figure 3.** USFWS Region 6 states.



**Figure 4.** TNC Ecoregions encompassing North Dakota.

### 3.5 Primary Sources for Identifying Species of Conservation Priority

(Note: The numbered source corresponds to the first column in tables 2-4)

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